Town of Normal

Stormwater Best Management Practices (BMPs)

WHY BEST MANAGEMENT PRACTICES (BMPs) MATTER

Common stormwater best management practices (BMPs) are detention basins, stormwater wetlands, vegetated swales and buffers. A variety of local, state and federal laws, including the Town's Stream Buffer Ordinance and the Federal Clean Water Act, encourage or require the control of urban pollutants. Maintaining BMPs is important to the Town's flood reduction and environmental protection efforts.

Detention basins, ditches, stream buffers and depressions reduce flooding and improve water quality. As property development occurs, land is covered by roads, parking lots, rooftops and other hard and impervious surfaces that do not allow stormwater to soak into the ground. As a result, less rainwater is soaked up and more water – called stormwater – flows off the land at a faster rate. This can lead to erosion within local streams and the potential for flooding.

DETENTION BASINS

A detention basin is an excavated depression designed to collect and clean stormwater runoff. These basins help slow the rate of stormwater runoff from a neighborhood or business area by releasing the collected water at a rate that prevents downstream flooding or erosion. Detention basins also improve the quality of the stormwater by reducing pollutants that travel downstream into rivers and lakes.

Detention basins protect public and private property, public health and safety, and water quality. Stormwater runoff collected by the basins generally have higher concentrations of pollutants such as:

- **sediment;**
- **phosphorus and nitrogen from fertilizers;**
- **salts, oil or grease from street and parking surfaces; and**
- **bacteria from pet and animal waste.**

TYPES OF DETENTION BASINS

There are two different kinds of detention basins: dry and wet.

Dry basins temporarily hold stormwater runoff and do not have permanent pools of water. Between storms, water typically runs out of the basin and the basin usually remains dry. These basins can be utilized as open park space or for recreational activities such as soccer or lacrosse. Since they are generally mowed turf, dry basins are not as effective in filtering pollutants.

Wet basins contain permanent pools of water. They are designed to hold additional water capacity above the permanent pool to detain stormwater runoff. This water is discharged at a controlled rate through an outlet to a neighboring storm sewer or stream.

Native plantings along the banks of a wet basin filter pollutants, serve as an aesthetic and recreational amenity, and provide wildlife habitat. Well-managed native plantings are generally less attractive to geese than mowed grass.

A **wetland** differs from a dry or wet basin. In a wetland, water covers the soil or is present near the surface of the soil for much of the year. Wetland plants adapt to these wet conditions and provide habitat for both aquatic and terrestrial species. Like a wet basin, a wetland filters pollutants and provides aesthetic or recreational amenities such as hiking and bird watching.

Native plantings along the banks of a wet basin can filter pollutants, serve as an aesthetic and recreational amenity, and provide habitat for some wildlife and aquatic species. Well-managed native plantings also make wet basins less attractive to geese.

NATIVE VEGETATION BUFFERS

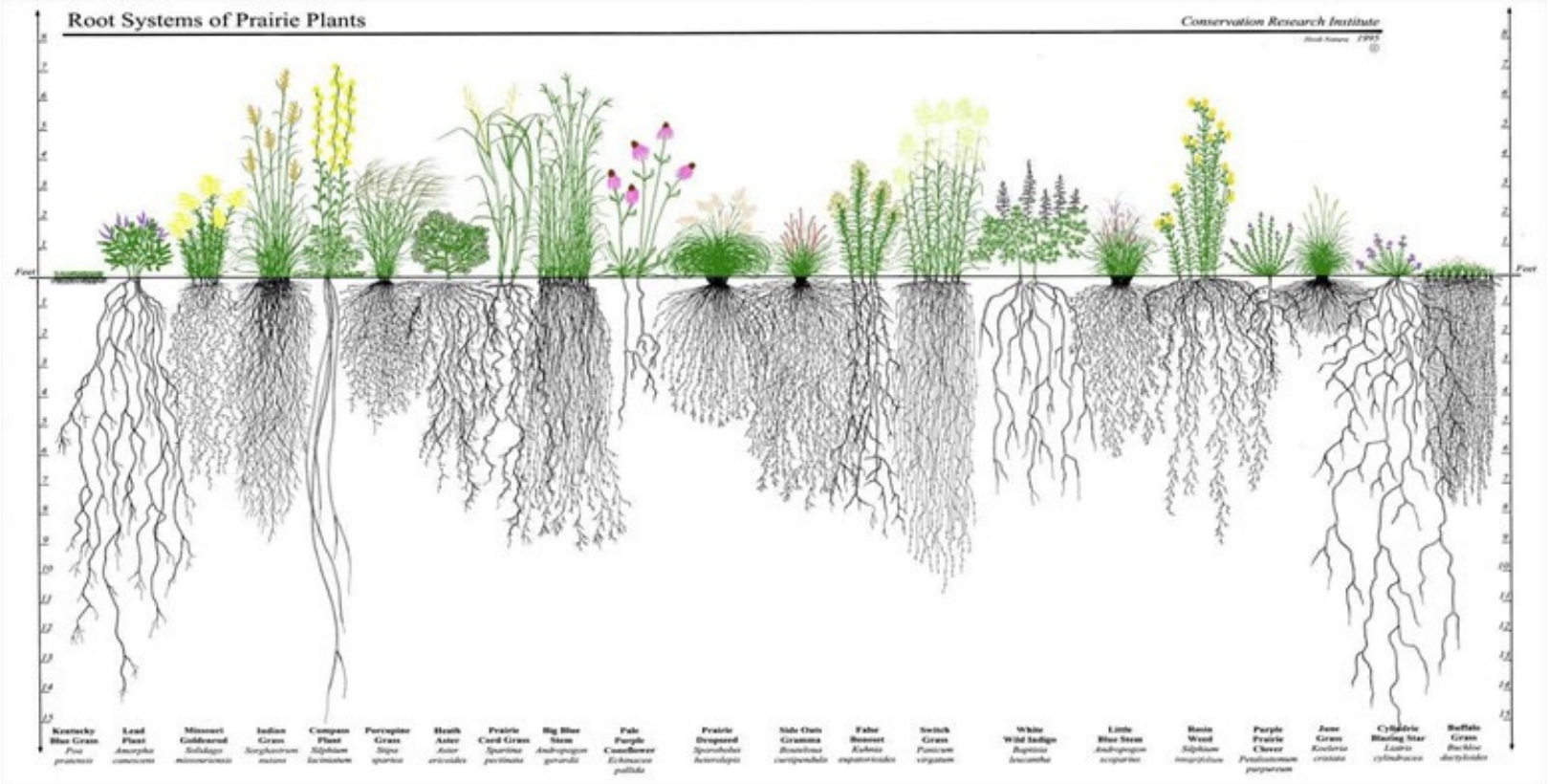
Native vegetation areas, or riparian buffers, include trees and shrubs running adjacent to streams and surrounding wet detention basins and wetlands. This vegetation zone, a valuable protection against outside influences, serves as a natural buffer which effectively:

- removes pollutants delivered from urban stormwater, helping to maintain the chemical, physical and biological integrity of water;
- reduces erosion and sediment entering the stream or basin;
- stabilizes wet basin and stream banks, reducing costs associated with repairing bank erosion;
- maintains the base flow of streams;
- provides natural wildlife habitat;
- offers scenic value and places for nature study, public education and wildlife observation; and
- provides natural screens and noise control.

Buffers range in size from 10- to 300-feet-wide, depending on the size of the body of water being protected by the native vegetation. The Town of Normal's Stream Buffer Ordinance contains regulations pertaining to establishing, maintaining and protecting areas of vegetation surrounding all streams with the local jurisdiction. The alteration of these native vegetation areas, or riparian buffers, is strictly limited.

BIOSWALES

Swales (or bioswales) are open-channel drainageways along residential streets, parking lots and highways that move stormwater in place of conventional storm sewer pipes. Swales treat stormwater runoff using native vegetation to increase pollutant-filtering capabilities.



VEGETATION MANAGEMENT

The Town of Normal has adopted model Ordinances to protect native vegetation areas. These areas filter sediments from stormwater runoff and prevent erosion of streams and basins. While turf grass is the most common groundcover in the community, native vegetation is far more successful for stormwater best management practices. Protecting these areas with native vegetation is important, as they may include sensitive areas, such as steep slopes or erodible soils, where disturbance may adversely affect water quality.

Most lawns in our community are planted with non-native turf grasses like bluegrass. While these grasses are attractive and colorful, their very short roots do not absorb and filter water effectively. Native plants have extremely long roots that grow up to 16 feet long. These deeper root systems increase the ability of the soil to absorb and retain water and pollutants. They also anchor the soil and prevent erosion to a greater extent than mowed turf grass.

Citizens should not mow within riparian buffer zones or native vegetation areas. The buffers enhance water quality, improve local ecology and create cost savings. The Town of Normal evaluates no-mow areas along streams, basins and other places where native connections make sense for sustainable natural resource management. These areas may be designated with signs.

Occasionally, these areas may be closed for planting or maintenance. As part of appropriate maintenance, the Town may mow these areas generally one to two times a year. A prescribed burn may also be part of appropriate maintenance completed by the Town. Burning native vegetation buffers every two to three years stimulates native growth and deters the growth of non-native weeds and undesirable woody species.

How You Can Help

- Respect the plant and wildlife habitat in riparian buffer zones or native vegetation areas and follow Town guidelines.
- Help give nature a hand. Be patient. Ecological succession can take years, but ultimately it improves water quality and the health of our streams and detention basins by filtering pollutants and reducing erosion.
- Minimize the use of fertilizer and pesticides on your property, especially near basins, streams and other water ways. Excess fertilizer can flow off lawns and into storm sewers, eventually draining into nearby waterbodies.
- Do not use lawn chemicals when rain is in the forecast. Choose phosphorus-free options if fertilizers are needed.
- Properly dispose of grass clippings by composting or taking them to the Landscape Waste Drop-Off site at 1301 Warriner St., Normal. Do not dump them in or along native vegetation buffer zones.
- Landscape with native plants which reduce the amount of stormwater runoff leaving your property. Native plants require little maintenance, fewer lawn chemicals and less irrigation, saving you time and money.
- Add landscaping features designed to reduce stormwater runoff. Rain gardens, or collections of native shrubs, perennials and flowers planted in a small depression, help stormwater runoff soak into the ground. Redirect downspouts to help irrigate native rain garden plants which adapt well and grow in wet conditions.

VOLUNTEER FOR THE SUGAR CREEK STEWARDS PROGRAM

This group is part of the Ecology Action Center's Clean Water programming. Efforts are supported by the City of Bloomington and the Town of Normal.

Volunteers help improve Sugar Creek in designated areas throughout our communities by clearing invasive plant species and managing non-invasive plant growth.

For more information, contact the Ecology Action Center at 309-454-3169

www.ecologyactioncenter.org

Town of Normal

QUESTIONS?

Reach out to the Town of Normal:
Public Works Department
309-454-9571
www.normal.org

ECOLOGY ACTION CENTER